

## CLAIMS

What is claimed is:

1. A method for providing pseudo gray levels between gray levels on a display, said method comprising:  
adjusting one or more drive settings of a pixel; and  
creating a pseudo gray level to display from said pixel, wherein said pseudo gray level may be perceived as falling between said gray levels.
2. The method of claim 1 wherein said one or more drive settings of said pixel are adjusted by one level.
3. The method of claim 1 wherein there are three drive settings for said pixel.
4. The method of claim 3 wherein one drive setting differs from the other two drive settings by one level.
5. The method of claim 4 wherein said three drive settings are red, green and blue.
6. The method of claim 5 wherein said red drive setting is adjusted.
7. The method of claim 5 wherein said green drive setting is adjusted.
8. The method of claim 5 wherein said red drive setting and said green drive setting are adjusted.

9. A method of enhancing gray scale output on a color display, said method comprising:
- entering an input number that identifies a level of gray to be displayed;
  - extracting a smaller ranged number from said input number, wherein said smaller ranged number is associated with a true gray value;
  - dividing said input number by a factor to obtain a displayable gray scale number; and
  - adjusting said displayable gray scale number based on the remainder obtained from said dividing.
10. The method of claim 9 wherein said input number identifies one of 256 gray levels that can be perceived.
11. The method of claim 10 wherein said smaller range number is associated with one of 64 true gray values that can be displayed on said color display.
12. The method of claim 10 wherein said factor is 4.
13. The method of claim 9 wherein said remainder indicates how much brightness is needed for said displayable gray scale number.
14. The method of claim 9, said method further comprising:  
outputting said true gray value if said remainder is zero.
15. The method of claim 9, said method further comprising:  
increasing red, green or blue outputs associated with said displayable gray scale number if said remainder is not zero.
16. The method of claim 15, said method further comprising:  
adjusting said red output by one if said remainder is one.
17. The method of claim 15, said method further comprising:  
adjusting said blue output by one if said remainder is one.
18. The method of claim 15, said method further comprising:  
adjusting said green output by one if said remainder is two.

19. The method of claim 16, said method further comprising:  
adjusting said red and green outputs by one if said remainder is three.
20. The method of claim 17, said method further comprising:  
adjusting said blue and green outputs by one if said remainder is three.

21. A method of enhancing gray scales on a color display, said method comprising:  
capturing an image to be represented as multiple shades of gray; and  
mapping said multiple shades of gray of said image such that a user perceives a depth of gray levels beyond what is available in gray scale on said color display.
22. The method of claim 21 wherein said multiple shades of gray are mapped to both gray scale levels supported by said color display and color pixels determined to be perceived as levels of gray between said gray scale levels.
23. The method of claim 22, said method further comprising:  
adjusting said color pixels based on how much brightness is needed for display.
24. The method of claim 23 wherein said color pixels are represented by three drive settings.
25. The method of claim 24 wherein said three drive settings are red, green and blue.
26. The method of claim 25, said method further comprising:  
adjusting said three drive settings based on the level of brightness needed for display.

27. A system for enhancing gray scale output on a color display, said system comprising:

a field programmable gate array (FPGA) for generating an input number, extracting a smaller ranged number from said input number, dividing said input number by a factor to obtain a displayable gray scale number, and adjusting color outputs based on said remainder obtained from said dividing; and

a color display for receiving said adjusted color outputs from said FPGA.

28. The system of claim 27 wherein said input number identifies a pseudo gray level to be displayed.

29. The system of claim 27 wherein said smaller ranged number is associated with a true gray value that can be displayed.

30. The system of claim 29 wherein said true gray value is displayed if said remainder is zero.

31. The system of claim 30 wherein said color outputs to be adjusted are associated with a red part and a green part of a pixel.

32. The system of claim 30 wherein said FPGA adjusts said color output associated with a red part of a pixel by one if said remainder is one.

33. The system of claim 30 wherein said FPGA adjusts said color outputs associated with a red part and green part of a pixel by one if said remainder is three.

34. The system of claim 30 wherein said FPGA adjusts said color output associated with a green part of a pixel by one if said remainder is two.

35. The system of claim 27 wherein said color outputs to be adjusted are associated with a blue part and a green part of a pixel.

36. The system of claim 35 wherein said FPGA adjusts said color output associated with a blue part of a pixel by one if said remainder is one.

37. The system of claim 35 wherein said FPGA adjusts said color outputs associated with a blue part and green part of a pixel by one if said remainder is three.

38. The system of claim 35 wherein said FPGA adjusts said color output associated with a green part of a pixel by one if said remainder is two.

39. A method of enhancing gray scale output on a color display, said method comprising:

selecting an 8-bit number that identifies a gray level to be displayed;  
extracting the upper 6 bits of said 8-bit number, wherein said upper 6 bits are associated with a gray value;  
dividing said 8-bit number by 4 to obtain a displayable gray scale number; and  
adjusting said displayable gray scale number based on the remainder obtained from said dividing.

40. The method of claim 39, said method further comprising:  
outputting said gray value if said remainder is zero.

41. The method of claim 39, said method further comprising:  
increasing red and green outputs associated with said displayable gray scale number if said remainder is not zero.

42. The method of claim 41, said method further comprising:  
increasing said red output by one if said remainder is one.

43. The method of claim 41, said method further comprising:  
increasing said green output by one if said remainder is two.

44. The method of claim 41, said method further comprising:  
increasing said red and green outputs by one if remainder is three.